AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

Listing of Claims

Claim 1 (currently amended): A conductor material for an actuator element,

the conductor material comprising a gel comprising carbon nanotubes, a polymer and an ionic liquid.

Claim 2 (original): An electrode layer for an actuator element,

the electrode layer comprising a gel composition comprising carbon nanotubes, an ionic liquid and a polymer.

Claims 3-7 (cancelled)

Claim 8 (new): A conductor material for an actuator element according to Claim 1, wherein the polymer is at least one member selected from the group consisting of polyvinylidene fluoride/hexafluoropropylene copolymer, polyvinylidene fluoride, perfluorosulfonic acid, poly(2-hydroxyethyl methacrylate), polymethyl methacrylate, polyethylene oxide, and polyacrylonitrile.

Claim 9 (new): An electrode layer for an actuator element according to Claim 2, wherein the polymer is at least one member selected from the group consisting of polyvinylidene fluoride/hexafluoropropylene copolymer, polyvinylidene fluoride, perfluorosulfonic acid, poly (2-hydroxyethyl methacrylate), polymethyl methacrylate, polyethylene oxide, and polyacrylonitrile.

Claim 10 (new): An actuator element, comprising:

a first electrode layer comprising a first gel film comprising carbon nanotubes, an ionic liquid and a polymer;

an ion-conductive layer comprising a second gel film comprising the ionic liquid and the polymer, formed on the first electrode; and

a second electrode layer comprising a third gel film comprising carbon nanotubes, the ionic liquid and the polymer, formed on the ion-conductive layer, the second electrode layer being insulated from the first electrode layer;

the actuator element being capable of being flexed or deformed by creating a potential difference between the electrode layers.

Claim 11 (new): An actuator element according to claim 10, wherein the first electrode layer has a first surface having the ion-conductive layer formed thereon and a second surface,

wherein the second electrode layer has a third surface having the ion-conductive layer formed thereon and a fourth surface, the actuator element further comprising:

a first conductive layer formed on the second surface, and

a second conductive layer formed on the fourth surface.

Claim 12 (new): An actuator element according to claim 10, wherein the polymer is at least one member selected from the group consisting of polyvinylidene fluoride/hexafluoropropylene copolymer, polyvinylidene fluoride, perfluorosulfonic acid, poly(2-hydroxyethyl methacrylate), polymethyl methacrylate, polyethylene oxide, and polyacrylonitrile.

Claim 13 (new): An actuator element according to claim 11, wherein the polymer is at least one member selected from the group consisting of polyvinylidene fluoride/hexafluoropropylene copolymer, polyvinylidene fluoride, perfluorosulfonic acid, poly(2-hydroxyethyl methacrylate), polymethyl methacrylate, polyethylene oxide, and polyacrylonitrile.

Claim 14 (new): A method for producing the actuator element, comprising:

forming a first electrode layer comprising a first gel film comprising carbon nanotubes, an ionic liquid and a polymer;

forming an ion-conductive layer comprising a second gel film comprising the ionic liquid and the polymer, formed on the first electrode; and

forming a second electrode layer comprising a third gel film comprising carbon nanotubes, the ionic liquid and the polymer, formed on the ion-conductive layer, the second electrode layer being insulated from the first electrode layer;

wherein the first electrode layer, the ion-conductive layer and the second electrode layer are formed by casting, coating, printing, extrusion, or injection.

Claim 15 (new): A method for producing the actuator element according to claim 14, wherein the first electrode layer has a first surface having the ion-conductive layer formed thereon and a second surface, wherein the second electrode layer has a third surface having the ion-conductive layer formed thereon and a fourth surface, the method further comprising:

forming a first conductive layer formed on the second surface, and

forming a second conductive layer formed on the fourth surface, wherein the electrode layers and the ion-conductive layer are formed by casting, coating, printing, extrusion, or injection.

Claim 16 (new): An actuator element according to claim 10, wherein the actuator element is operated in air.

Claim 17 (new): An actuator element according to claim 11, wherein the actuator element is operated in air.